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ABSTRACT

A behavioral weight reduction model for moderately mentally retarded adolescents is described. Six phases of the treatment program are delineated: background in information; selection of students; preintervention procedures (self monitoring and establishing goal weights); active intervention (training, reinforcement, instruction); maintenance (including parent inservice on nutrition); and followup 4 to 6 months after the last maintenance meeting. Field test data are cited which show significant weight reduction from the behavioral approach. The model is explained to stress the active participation of students and parents in developing appropriate eating habits. (CL)

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Can The Moderately Retarded Overweight Teenager Lose Weight By Behavioral Techniques

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Running Head: Weight Reduction Model

ABSTRACT

The paper describes a behavioral weight reduction treatment and maintenance with moderately mentally retarded adolescents. The model delineates six phases of the treatment program as well as instructional components. The model was devised for implementation by special education teachers and parents. Field data based on the model is reviewed.

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Obesity is a serious health problem for the mentally retarded due to the high association between it and lowered mortality age (Marks, 1961) diabetes (Abrams, Jarret & Keen, 1969), respiratory stress (Wilson & Wilson, 1969) and cardiovascular disease (Gordon & Kannel, 1973). Recently investigators using behaviorial treatment programs have produced significant weight loss with (a) severely retarded adults (Foreyt & Parks, 1975) (b) moderately retarded adolescents (Rotatori, Fox, & Switzky, 1978 a.) and mildly retarded adults (Joachim & Korboot, 1975; Rotatori, Fox, & Switzky; 1978 b; Staugaitis, 1978). Only one study (Rotatori, Fox, & Switzky, 1978 a) trained special education teachers and parents to instruct children in mastering behavioral weight reduction techniques. This is unfortunate since teachers and parents provide the primary training input for moderately/mildly retarded children. The present paper describes a behavioral weight reduction treatment model for use by special educators to produce weight loss in moderately/mildly retarded overweight children. Table 1

Insert Table 1 about Here

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delineates the six phases of the behavioral model. Each phase is important in the establishment of a successful weight reduction program. The model involves both school and home instruction as well as self control management. The model is appropriate for either individual or group programming.

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TABLE 1

TREATMENT PHASES FOR BEHAVIORAL WEIGHT MODEL

PHASE I

Background Information
1. general
2. family
3. medical
4. educational
5. social

PHASE II

Selection of Students
1. criteria
   -10% overweight
   -desire to lose weight
   -no medical problems
   -parent approval
2. parent inservice
   -rationale for model
   parents role in treatment
   -communication

PHASE III

Preintervention Procedures
1. self monitoring
   -weight daily
   -food diary
   -activity level
2. establish goal weights
   -short term
   -long term

PHASE IV

Active Intervention
1. Train students in techniques
2. Reinforcement
   -home
   -school
3. Instruction
   -verbal description
   -video tape
   -live modeling
   -simulated practice
   -feedback

PHASE V

Maintenance
1. Review Techniques
2. Reduction in
   -length of sessions
   -frequency of sessions
3. Eliminate Recording Forms
   -weight
   -food
4. parent inservice on nutrition
   -food exchanges
   -composition of an adequate meal
   -substituting low calorie snacks
   -food preparation and calories

PHASE VI

Follow-Up
1. Weigh-in
2. Mini booster program if necessary

Background Information

Phase I

Before students are selected, a weight questionnaire is filled out by the students and their parents. The questionnaire is composed of the following: (1) general information (i.e. age, height, past success in dieting, age of onset of obesity), (2) a brief family history, (3) a brief medical history, (4) a section on academic background and (5) a short section on social history. Information gathered from the questionnaire serves as a preliminary screening device to assess the following: the students' motivation, the students' view of their weight problem, the attitude of individuals in the students' immediate environment towards the student's attempts at losing weight, medical problems which may interfere with a behavioral weight reduction program and a minimal idea of the student's academic background.

Phase II Selection of Students

All students selected to participate in the treatment should meet the following criteria: (1) have volunteered for the program, (2) were not taking medication for weight loss, (3) had a physical examination by a medical doctor during the past year with no reported major medical problems (4) were at least 10 percent overweight (Robinson, 1967) (5) would not be involved in any other weight reduction program (6) expressed a desire to lose at least 10 pounds (7) could attend specified meeting times without interfering with ongoing school programming (8) had parent approval to participate and (9) students' parents expressed an interest in assisting in the treatment. Students who meet the above criteria

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have been found to stay with the program rather than drop out (Rotatori, 1978). All parents of the students selected to participate in the diet program are mandated to attend an inservice presentation. At this time, the treatment model and its rationale is discussed. Treatment techniques are demonstrated and recording forms that are used during the treatment phase are reviewed. Parents are then individually informed of their role in assisting and training their children in the various techniques. Lastly a communication system for messages between school and home is discussed.

Phase III Preintervention

During a two week preintervention phase the students are trained to self monitor daily (a) their weight, (b) food consumed and (c) physical activity engaged in. By recording their weight daily and writing down all food consumed during the day, the students begin to associate the relationship between eating and their weight fluctuation. The food consumed also informs the teacher of poor nutrition habits that students may have (e.g., not eating fruits, eating three candy bars a day). Data concerned with physical activity level pinpoints the possible need for an increased energy expenditure program (e.g., child only sits at home and watches t.v.)

At the end of this period students with assistance from their teachers establish realistic short and long term goal weights. The establishment of goal weights gives the students a more concrete reference point to work towards. The literature (Hall, 1972) recommends that a weekly weight loss between .5 to 1.00 pounds is

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ideal.

Phase IV Active Intervention

A schematic representation of the intervention plan appears in Table 2.

Insert Table 2 here

TABLE 2

Schematic Representation of the Intervention Plan

Present behavior patterns	Leads to	obesity
Eat too fast eat more food when present eat fewer meals engage in less physical activity overeat		consumption of more calories than are necessary for daily energy expenditure needs
Modify eating patterns	intervention techniques	Loss of weight
Reduce rate of eating	chew fully and swallow food before next bite	
	put utensils down before next bite	
reduce food cues	take only one helping	consumption of less calories than are needed for daily energy expenditure needs
	eat in one place	
	use complete place setting	
increase activity level	waste energy	
	incorporate 2 daily energy exercise periods into one's routine	
eat less food	leave some food on plate	
	have low calorie snacks	
	engage in a favorite activity instead of snacking	
	engage in emotional response routine to decrease urge to eat	

Techniques were selected so as to incorporate a major theory of obesity as proposed by Schachter (1971). His theory of obesity delineates a number of behavioral eating patterns which consistently differentiate the obese and the nonobese person. Schachter's theory is based on empirical observations and findings which indicate that the obese person's eating behavior is to a large extent determined by external stimulus control factors as opposed to internal feedback factors arising from changes in an individual's physiological state (e.g., hunger stimuli). The following are a list of behaviors which Schachter has found to consistently differentiate the obese from the non-obese: the obese eat at a faster rate than the nonobese; the obese engage in less physical activity than the nonobese; the obese eat fewer meals than the nonobese, when the obese eat a meal they eat more than is necessary, the obese eat more food when food is present than when it is not in comparison to the nonobese, and the obese eat more good tasting food than bad tasting food when given this opportunity than the nonobese. These eating behavior patterns of the obese not only differentiate the obese from the nonobese but their behavior patterns set the stage for continued obesity because the obese continue to consume more calories than is necessary for their daily energy expenditure needs.

The intervention plan stresses the modification of obese related eating patterns. The techniques included stimulus control procedures which would modify an obese person's eating behaviors such that internal feedback arising from changes in the obese individuals physiological stage (e.g., hunger stimuli) would gain greater discriminative stimulus control to elicit the act of eating than external discriminative stimuli (e.g., presence of food) which had in the past elicited obese eating

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behaviors.

Reinforcement Component: Students who lose one or more pounds in a week's time are eligible for school and home reinforcement. Home and school reinforcement consisted of agreed upon activity rewards (e.g., going to a ball game, class free time).

Students also received training in self-reinforcement for using the techniques trained. The students rate their performance on the techniques daily. The ratings can then be exchanged for a grade (e.g., A, B, C.). The students then exchange the grade for an envelope which contains self reinforcement procedures (e.g., listen to a favorite record, say "I'm doing great on my diet").

Instruction Component: To facilitate understanding of the behavioral techniques a number of instructional modalities are employed. First, the technique to be trained is verbally described. Included in the description is the rationale for the procedures. Next, the students are exposed to a video tape presentation of an individual modeling the technique. After this the teacher models the procedure for the students. Next, the students practice the procedure in a simulated situation. Then feedback is provided to the students on their practice trials. At the end of the meeting, the teacher talks individually with each student about the procedure introduced, as well as discuss progress on techniques

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introduced at past meetings.

PHASE V Maintenance

The maintenance phase occurs immediately following the last active intervention meetings. During this phase, the students are exposed to a review of the techniques trained. The students continue to receive school and home reinforcement for weight lost. However, the following changes occur during this phase: (1) reduction in length of meetings, (2) reduction in frequency of meetings, and (3) the elimination of weight and food eaten recording forms. Also at the end of this phase, parents are requested to attend another inservice presentation. This presentation is concerned with delineating for parents sound food nutritional practices. Topics discussed would include (a) appropriate food exchanges, (b) the composition of an adequate meal in regards to the basic four food groups (c) the substitution of low calorie snacks and (d) the relationship between the specific preparation and cooking of a food and the amount of calories present.

PHASE VI Follow- Up

A follow-up assessment check occurs after four to six months after the last maintenance meeting. All students are weighed-in. Any student that has regained weight should be provided a"mini-booster" program. Such a program would involve a review of the techniques trained, the re-introduction of self-monitoring forms, the establishment of a goal weight and an individual school and home reinforcement program.

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Field Data

A pilot study (Rotatori, Parrish & Freagon, 1979) using the above model was directed by a school nurse. Subjects were moderately retarded public school children who ranged in age from eight to fourteen years. The treatment period lasted for seven weeks. The subjects attained a mean weight loss of 3.7 pounds with an average weekly weight loss of .6 pounds per student. This pilot program demonstrated that a school nurse with parent support could provide effective and practical behavioral weight reduction experiences for retarded children. A similar study (Rotatori & Switzky, 1979) employed a control group to demonstrate the effectiveness of a behavioral weight reduction treatment procedure for moderately retarded students attending a public high school. Two behavior therapy groups were formed. Behavior therapy group 1 (n=6) was exposed to the techniques via video tape playback of the live sessions. During the 14-week treatment period, subjects in behavior therapy groups 1 and 2 achieved an average weekly loss of .78 and .68 pounds per week, respectively. In contrast the wait-list control subjects (no treatment) had a mean average weekly weight gain of .28 pounds per subject. Following the 14-week period, the behavior therapy subjects were exposed to a five week maintenance phase. Subjects in behavior therapy groups 1 and 2 had a mean weight loss of .39 and .51 pounds per subject respectively. Subjects in the wait-list control group had a weekly average weight gain of .23 pounds per subject. A 16 week follow-up assessment revealed that both behavior therapy groups continued to lose weight.

A final study (Rotatori & Fox, 1979) compared the effectiveness of a behavioral verse social-nutritional approach to weight reduction with the

moderately retarded. The study included a 14 week treatment phase, a five week maintenance phase, and a 16 week follow-up phase. Subjects for the study were 30 moderately retarded youth attending a public high school program. The subjects were divided into a behavior therapy group (n=12), a social-nutritional group (n=12), and a wait-list control group (n=6). The social-nutritional group's meetings were concerned with discussion of the following topics: (a) good nutritious foods to eat; (b) low calorie snack substitutes; (c) the advantages of exercising; (d) reasons not to eat when emotionally upset; (f) talking about negative feelings associated with being overweight; (g) being positive about losing weight; and (h) setting weight goals. The behavior therapy subjects were exposed to the first author's behavioral weight treatment model. The behavior therapy group lost significantly more weight under all phases than either the social-nutrition or wait-list control groups. Figure 1 presents the mean weight change in pounds for the three groups during the experimental conditions.

Insert Figure 1 about here

Hall (1972), stressed that studies which have demonstrated successful weight loss findings reported weekly weight loss ranging from .5 to 1.00 pounds per subject. The above studies produced average weekly weight losses in that range. The last two studies demonstrated that additional weight loss can be attained when a maintenance phase is employed following the active teaching/training phase.

SUMMARY

The behavioral weight reduction model presented provides special

educators with a needed area of programming for retarded adolescents with a serious health related problem. The model stresses the active participation of students and parents in the development of appropriate eating habits. For the obese retarded, the mastery of behavioral weight reduction techniques provides the individuals with skills that appear to be of more permanent therapeutic value than their exposure to traditional calorie reduction diets.

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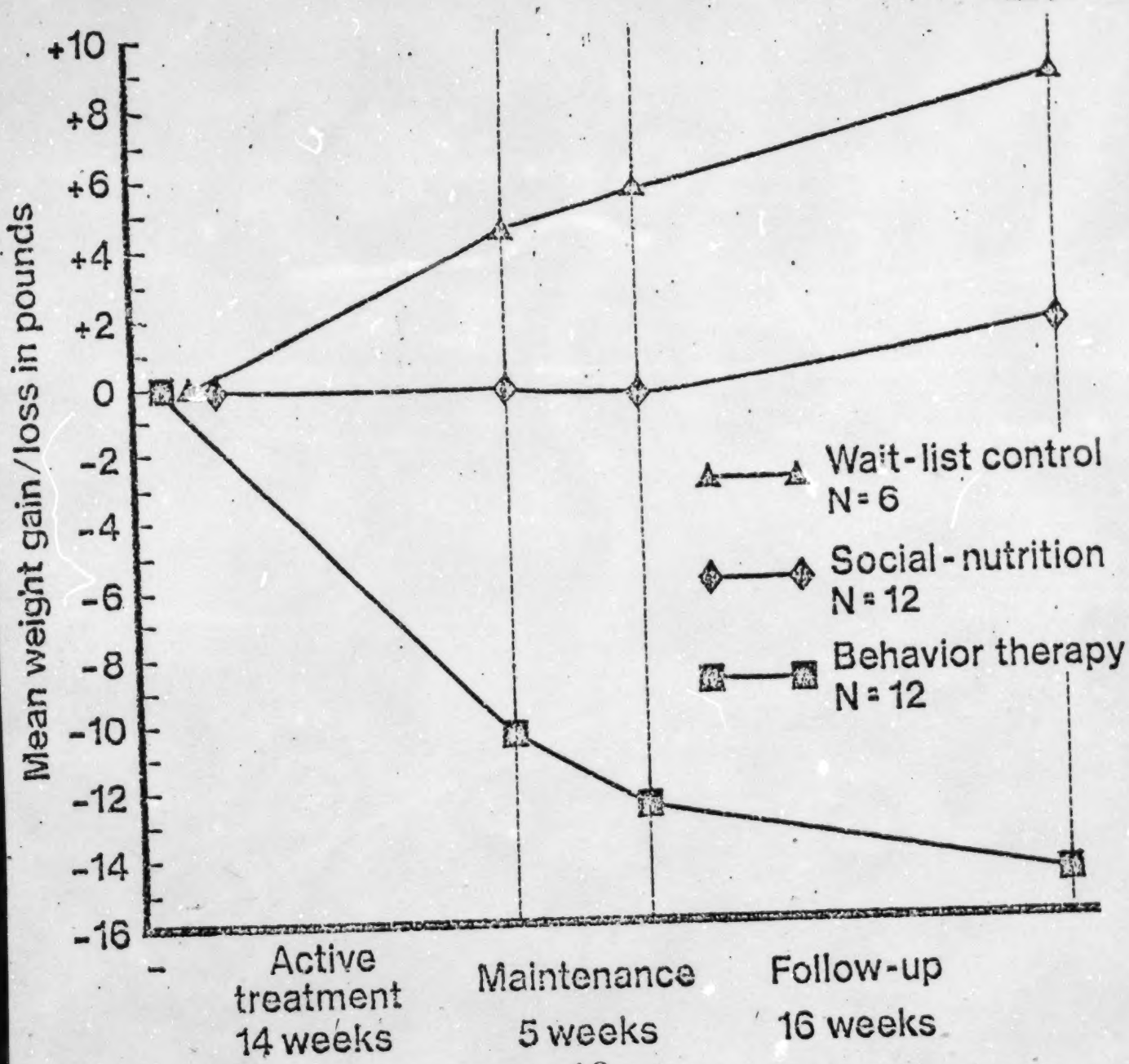
+10
+8
+6
+4
+2
0
-2
-4
-6
-8
-10
-12
-14
-16
Mean weight gain/loss in pounds
Wait-list control
N = 6
Social-nutrition
N = 12
Behavior therapy
N = 12
Active
treatment
14 weeks
Maintenance
5 weeks
Follow-up
16 weeks

Figure 1.